


## Resurveys

## THE NATURE OF RESURVEYS



6-1. A *resurvey* is a reconstruction of land boundaries and subdivisions accomplished by rerunning and re-marking the lines represented in the field-note record or on the plat of a previous official survey. The field-note record of the resurvey includes a description of the technical manner in which the resurvey was made, full reference to recovered evidence of the previous survey or surveys, and a complete description of the work performed and monuments established. The resurvey, like an original survey, is subject to approval of the directing authority.

6-2. Government resurveys involve considerations of a different character from those relating to original surveys. The object is twofold: First, the adequate protection of existing rights acquired under the original survey in the matter of location on the earth's surface, and second, the proper marking of the boundaries of the remaining public lands.

6-3. Although the discussion in this chapter pertains especially to the resurvey of an entire township, the same principles apply in the smaller projects necessary for proper management of the public lands. These smaller parcels must be considered in context with the township, which is the unit of resurvey because it was the unit of the original survey.

6-4. A *dependent resurvey* is a retracement and reestablishment of the lines of the original survey in their true original positions according to the best available evidence of the positions of the original corners. The section lines and lines of legal subdivision of the dependent resurvey in themselves represent the best possible identification of the true legal boundaries

of lands patented on the basis of the plat of the original survey. In legal contemplation and in fact, the lands contained in a certain section of the original survey and the lands contained in the corresponding section of the dependent resurvey are identical.

6-5. An *independent resurvey* is an establishment of new section lines, and often new township lines, independent of and without reference to the corners of the original survey. In an independent resurvey it is necessary to preserve the boundaries of those lands patented by legal subdivisions of the sections of the original survey which are not identical with the corresponding legal subdivisions of the sections of the independent resurvey. This is done by surveying out by metes and bounds and designating as tracts the lands entered or patented on the basis of the original survey. These tracts represent the position and form of the lands alienated on the basis of the original survey, located on the ground according to the best available evidence of their true original positions.

6-6. As in the case of original surveys, the records of resurveys must form an enduring basis upon which depends the security of the title to all lands acquired thereunder. The surveyor must therefore exercise the greatest care in his field work and in preparing the record so that the resurvey will relieve existing difficulties as far as possible without introducing new complications.

6-7. A *retracement* is a survey that is made to ascertain the direction and length of lines and to identify the monuments and other marks of an established prior survey. RetrACEMENTS may be made for any of several reasons. In the simplest case it is often necessary to retrace

several miles of line leading from a lost corner which is to be reestablished to an existent corner which will be used as a control. If no intervening corners are reestablished, details of the retracement are not usually shown in the record, but a direct connection between the two corners is reported as a tie. On the other hand, the retracement may be an extensive one made to afford new evidence of the character and condition of the previous survey. Recovered corners are rehabilitated, but a retracement does not include the restoration of lost corners or the reblazing of lines through the timber. The retracement may sometimes be complete in itself, but usually it is made as an early part of a resurvey.

6-8. In the case of *Cragin v. Powell*, 128 U.S. 691 (1888), the Supreme Court of the United States cited with favor the following quotation from a letter of the Commissioner of the General Land Office to the surveyor general of Louisiana:

The making of resurveys or corrective surveys of townships once proclaimed for sale is always at the hazard of interfering with private rights, and thereby introducing new complications. A resurvey, properly considered, is but a retracing, with a view to determine and establish lines and boundaries of an original survey, . . . but the principle of retracing has been frequently departed from, where a resurvey (so called) has been made and new lines and boundaries have often been introduced, mischievously conflicting with the old, and thereby affecting the areas of tracts which the United States had previously sold and otherwise disposed of.

## JURISDICTION

6-9. Resurveys have been made since the early days of the public land surveys. Initially they were made as corrective surveys under the general surveying appropriations when gross errors were found. Resurveys of particular public lands in certain States were later authorized by special acts of Congress. General legislation providing for resurveys was enacted when it became apparent that many older surveys were so obliterated or distorted that the lines could not be identified with certainty.

The Act of March 3, 1909, (35 Stat. 845), as amended June 25, 1910, (36 Stat. 885; 43 U.S.C. 772) authorized the Secretary of the In-

terior to make such resurveys as, after full investigation, he may deem essential to properly mark the boundaries of the remaining public lands.

The Act of September 21, 1918, (40 Stat. 965; 43 U.S.C. 773), provided authority for resurvey of townships in which disposals exceed 50 percent of the total area. Such resurveys may be undertaken upon application of the owners of at least three-fourths of the privately owned land in the township, or upon application of a court of competent jurisdiction, and upon a deposit of the proportionate estimated cost of the resurvey.

The Act of July 14, 1960, (43 U.S.C. 1364), authorized the Secretary of the Interior to accept contributions for cadastral surveys performed on federally controlled or intermingled lands.

Conservation and intensive use of the public domain have made necessary the retracement and re-marking of lines of the older surveys in order to identify the boundaries between public and private lands. Limited resurveys for this purpose are carried out under the annual appropriations for the management of public lands and resources.

6-10. As delegated by the Secretary of the Interior, the authority for engaging in a general resurvey, where public lands are involved, can issue only through the Director, Bureau of Land Management. Other Federal agencies vested with the administration of the lands may request resurveys by addressing the Director through the usual official channels. Justification for such action must be shown.

The Bureau of Land Management has exclusive jurisdiction over all matters pertaining to surveys and resurveys affecting the public lands. As between owners of lands, the title to which has passed from United States, final determination in the matter of fixing the position of disputed land boundaries rests with the local courts of competent jurisdiction. The rules of procedure laid down in the Manual of Surveying Instructions for the re-marking of lines of previous surveys are intended to be in harmony with the leading court decisions in suits involving boundary disputes. The rules should be so applied that the courts may, with security,

accept the boundaries thus determined insofar as they represent the true location of a particular piece of land intended to be conveyed by a patent. The official resurveys are undertaken only when duly authorized, and the field work assigned to a cadastral surveyor, who in that manner is acting under the authority of the Secretary of the Interior through the Bureau of Land Management and under the immediate direction of subordinate supervising officers.

### LIMIT OF AUTHORITY OF SURVEYOR

6-11. There are certain questions of a purely judicial nature involved in resurveys of every description where the decision is to be reserved to the Director of the Bureau of Land Management, particularly those relating to compliance with the general laws in respect to the entry of the public lands. Thus it comes within the realm of the surveying process to identify and mark out on the ground the various legal subdivisions of the public domain, but it is a judicial question beyond the function of the surveyor to determine whether or not specified lands have been duly earned under a certain entry. In the resurvey process the surveyor will determine whether or not lands embraced within a claim as occupied have been correctly related in *position* to the original survey. Where the demonstration of this question may be one involving more or less uncertainty, as is often the case, the surveyor will examine and weigh the evidence relating strictly to the surveying problem involved. He will interpret the evidence with respect to its effect upon the manner in which the resurvey shall be executed to protect valid rights acquired under the original survey. The surveyor has no authority to enter into an agreement concerning the exchange of one subdivision for another or to bind the Bureau of Land Management in this particular.

### BONA FIDE RIGHTS OF CLAIMANTS

6-12. In order to carry out the provisions of the laws relating to resurveys, the surveyor

must understand the meaning of the term "bona fide rights" and under what circumstances it will be held that such rights have been impaired by a resurvey. The Act of March 3, 1909, (35 Stat. 845), as amended June 25, 1910, (36 Stat. 884; 43 U.S.C. 772) reads in part as follows:

That no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant, entryman, or owner of lands affected by such resurvey or retracement.

The rights of claimants are to be similarly protected under the provisions of the Act of September 21, 1918, (40 Stat. 965; 43 U.S.C. 773).

6-13. Bona fide rights are those acquired in good faith under the law. A resurvey can affect bona fide rights only in the matter of *position* or *location* on the earth's surface. The surveyor will be concerned only with the question of whether the lands covered by such rights have been actually *located* in good faith. Other questions of good faith (such as priority of occupation, possession, continuous residence, value of improvements and cultivation) do not affect the problem of resurvey except as they help to define the position of the original survey.

6-14. The basic principles of protecting bona fide rights are the same in either the dependent or the independent resurvey. Each is intended to show the original position of entered or patented lands included in the original description. The dependent resurvey shows them as legal subdivisions, the independent resurvey as segregated tracts. Each is an official demonstration by the Bureau of Land Management according to the best available evidence of the former survey. There is no legal authority for substituting the methods of an independent resurvey in disregard of identified evidence of the original survey.

6-15. The position of a tract of land, described by legal subdivisions, is absolutely fixed by the original corners and other evidences of the original survey and not by occupation or improvements, or by the lines of a resurvey which do not follow the original. A conveyance of land must describe the parcel to be conveyed so that it may be specifically and exactly identified, and for that purpose the law directs that a survey be made. Under fundamental law the



corners of the original survey are unchangeable. Even if the original survey was poorly executed, it still controls the boundaries of land patented under it.

The surveyor should neither rigidly apply the rules for restoration of lost corners without regard to effect on location of improvements nor accept the position of improvements without question regardless of their relation or irrelevance to existing evidence of the original survey. Between these extremes will be found the basis for determining whether improved lands have been located in good faith or not. No definite set of rules can be laid down in advance. The solution to the problem must be found on the ground by the surveyor. It is his responsibility to resolve the question of good faith as to location.

6-16. It may be held generally that the entryman has located his lands in good faith if such care was used in determining his boundaries as might be expected by the exercise of ordinary intelligence under existing conditions. The relationship of the lands to the nearest corners existing at the time the lands were located is often defined by his fencing, culture, or other improvements. Lack of good faith is not necessarily chargeable if the entryman has not located himself according to a rigid application of the rules laid down for the restoration of lost corners where (1) complicated conditions involve a double set of corners, both of which may be regarded as authentic; (2) there are no existing corners in one or more directions for an excessive distance; (3) existing marks are improperly related to an extraordinary degree; or (4) all evidences of the original survey which have been adopted by the entryman as a basis for his location have been lost before the resurvey is undertaken.

6-17. In cases involving extensive obliteration at the date of entry, the entryman or his successors in interest should understand that the boundaries of the claim will probably be subject to adjustment in the event of a resurvey. A general control applied to the boundaries of groups of claims must be favored as far as possible in the interest of equal fairness to all and of simplicity of resurvey. A claim cannot generally be regarded as having been

located in good faith if no attempts have been made to relate it in some manner to the original survey.

6-18. Cases will arise where lands have been *occupied* in good faith, but whose boundaries as occupied disagree with the position of the legal subdivision called for in the description. Obviously the rule of good faith as to location cannot apply; relief must be sought through the process of amended entry under R. S. 2372, as amended (43 U.S.C. 697), to cover the legal subdivisions actually earned, rather than through an alteration of the position of established lines. This is a process of adjudication rather than one of resurvey. A case of this character should be regarded as erroneous location in precisely the same manner as if the question of resurvey were not involved.

## GENERAL FIELD METHODS

6-19. In most areas that require resurveys the survey of record can be reconstructed by the methods of the dependent resurvey. The principal resurvey problem is one of obliteration with comparative absence of large discrepancies. The special instructions provide for a retracement and dependent resurvey, and these may be carried on at the same time if no complications develop. Even where the record survey proves to be badly distorted, the extent of private ownership may dictate that the resurvey will be of the dependent type. Many areas have a checkerboard pattern of ownership as the result of railroad or military road grants, and this same condition is approximated where extensive disposals have been made. Since an independent resurvey cannot affect boundaries of lands already alienated, it serves little purpose where every section line is the boundary of private land.

6-20. Occasionally, after a dependent resurvey has been commenced, complications develop which make the methods inapplicable. Provision should always be made in the special instructions calling for the surveyor to report such facts to the supervising office. The report should embody the same information as that required in the report of a preliminary examination hereinafter outlined.

6-21. Providing a large enough area of public land remains to warrant it, the methods of the independent resurvey are employed if there are intolerable discrepancies in the original survey. This occurs where the early survey was not faithfully executed with the result that some lines usually have not been established, have no actual existence, and cannot be reconstructed to conform to a fictitious record. Action should be taken to suspend the plat of record as a basis of disposals and leases before an independent resurvey is commenced.

When it is probable that an independent resurvey will be necessary, the special instructions provide that a preliminary field examination be made. No new monuments are constructed during the examination. Interested parties are to be informed that the examination is being made strictly for the purpose of developing information. They will be given to understand that, while new lines may be run later to identify the remaining public lands, the resurvey will be planned to protect all valid existing rights.

6-22. The report of a field examination consists of a diagram to scale, a narrative, and the field notes of the retracements made. The diagram shows the correlation of existent original corners, corners established by local surveyors, and any monuments of unknown origin. Line fences, line roads, and the boundaries of claims are also shown. The narrative includes a description of the recovered evidence and statements by witnesses regarding obliterated corners. The extent of obliteration and the degree of faithfulness of the original survey is discussed when this is pertinent. Disposals made by the Federal Government are listed and, if practicable, are shown on the diagram as well. Mention is made of improvements affected by the resurvey, the basis of claim locations, conflicts between claims, and any hiatus that may be anticipated. The field notes of the retracement form an important part of the report, since they show how correctly the natural features were represented in the original record. Finally, the surveyor recommends the procedure which he believes will best meet the existing conditions.

The report of the field examination is reviewed in the supervising office. Special instruc-

tions (or supplemental special instructions) are written to show the detail of the proposed resurvey. If the independent method is selected, an important consideration is the fixing of the out-boundaries of the township or townships within the planned resurvey. These limiting boundaries must be lines which can be restored in such a manner as to protect existing rights in the adjoining outside lands. An exception is where such a large area is to be independently resurveyed that it cannot all be included in one assignment. Occasionally, one portion of a township can be dependently resurveyed, while an independent resurvey is necessary in the remaining portion. In such a case the subdivisional lines separating the two types of resurvey must be dependently resurveyed.

6-23. Even when the procedures have been based on a preliminary examination, unforeseen difficulties may crop up in the progress of the resurvey by reason of the greater detail of the work. The new factors may make the special instructions inapplicable. If this occurs the surveyor should suspend further monumentation, make any additional examination required, then report the situation to the supervising office.

6-24. During the course of a resurvey the surveyor should advise all interested parties, as occasion and opportunity allow, that the resurvey is not official or binding upon the United States until it has been duly accepted by the Director, Bureau of Land Management, as provided by law. No alteration in the position of improvements or claim boundaries should be made in advance of the official acceptance of the resurvey.

## THE DEPENDENT RESURVEY

6-25. The dependent resurvey is designed to restore the original conditions of the official survey according to the record. It is based, first, upon identified original corners and other acceptable points of control, and, second, upon the restoration of lost corners by proportionate measurement in harmony with the record of the original survey. Some flexibility is allowable in applying the rules of proportionate measure-

ment in order to protect the bona fide rights of claimants.

6-26. The dependent resurvey is begun by making a retracement of the township exteriors and subdivisional lines of the established prior survey within the assigned work. Concurrently, a study is made of the records of any known supplemental surveys, and testimony is obtained from witnesses concerning obliterated corners. The retracement leads at once to identification of known and plainer evidence of the original survey. A trial calculation is made of the proportionate positions of the missing corners, followed by a second and more exhaustive search for the more obscure evidence of the original survey. If additional evidence is found, a new trial calculation is made. Corners still not recovered are marked only as temporary points which may be influenced by acceptable locations. These steps give the basic control for the resurvey. The surveyor then weighs the less certain collateral evidence against the proportionate positions so obtained.

6-27. A comparison of the temporary points with the corners and boundaries of alienated lands often helps in determining how the original survey was made, how the claims were located, or both. In analyzing the problem of a particular corner's location, it is often helpful to determine where the theoretical corner point would fall if a three-point control were used. In extreme cases the collateral evidence may be weighed against the position obtained by use of two-point control, particularly when supported by well-identified natural features. It may then prove that the original corner, which would otherwise be lost, has been perpetuated by an acceptably located claim.

Ordinarily the one-point control is inconsistent with the general plan of a dependent resurvey. The courts have sometimes turned to this as the only apparent solution of a bad situation, and unfortunately this has been the method applied in many local surveys, thus minimizing the work to be done, and the cost. Almost without exception the method is given the support that "it follows the record." This overlooks the fact that the record is equally applicable when reversing the direction of the control from other good corners, monuments,

or marks. The use of one-point control is only applicable where the prior survey was discontinued at a recorded distance or where it can be shown conclusively that the line was never established. If the line was discontinued by record, the field notes may be followed explicitly. If it was discontinued by evident unfaithfulness in execution, its use would be limited to the making of a tract segregation where the claimant has given confidence to the so-called field notes.

6-28. Once it is accepted, a local point of control has all the authority and significance of an identified original corner. The influence of such points is combined with that of the previously identified original corners in making final adjustments of the temporary points. The surveyor must therefore use extreme caution in adopting local points of control. These may range from authentic perpetuations of original corners down to marks which were never intended to be more than approximations. When a local reestablishment of a lost corner has been made by proper methods without gross error and has been officially recorded, it will ordinarily be acceptable. Monuments of unknown origin must be judged on their own merits, but they should never be rejected out of hand without careful study. The age and the degree to which a local corner has been relied on by *all* affected landowners may lead to its adoption as the best remaining evidence of the position of the original corner. The surveyor must consider all these factors. However, he cannot abandon the record of the original survey in favor of an indiscriminate adoption of points not reconcilable with it.

The field-note record of the resurvey should clearly set forth the reasons for the acceptance of a local point where it is not identified by actual marks of the original survey. Recognized and acceptable local marks will be preserved and described. Where they are monuments of a durable nature, they are fully described in the field notes and a full complement of the required accessories recorded, but without disturbing or re-marking the existing monument. New monuments are established if required for permanence, in addition to, but without destroying the evidence of the local marks.



**6-29.** The surveyor should make certain while still in the field that he has noted complete descriptions of all identified or accepted corners for entry in the official record of the resurvey so that the record will embrace:

(1) A complete description of the remaining evidence of the original monument;

(2) A complete description of the original accessories as identified;

(3) A concise statement relating to the recovery of a corner based upon identified line trees, blazed lines, items of topography, or other calls of the field notes of the original survey, in the absence of evidence of the monument or its accessories;

(4) A statement relating to the relocation of an obliterated monument; or a statement of the determining features leading to the acceptance of a recognized local corner;

(5) A complete description of the new monument; and

(6) A complete description of the new accessories.

**6-30.** The running and measurement of the true lines of the dependent resurvey, the marking of lines between corners, the notation of objects to be recorded, and the monumentation of the survey must conform to the requirements for original surveys. The technical record of the resurvey shows the relationship between the original survey and the reestablished lines.

**6-31.** In the course of marking the true lines it is often desirable to establish sixteenth-section corners or minor subdivision corners which control the position of intermingled public land within a section. Later subdivision of the section would then not require a new resurvey of the section lines for that purpose.

**6-32.** The limit of closure already prescribed will be observed. Special stress will be given to the need for greater accuracy in the measurements, which largely govern the restoration of lost corners. (section 3-124).

## THE INDEPENDENT RESURVEY

**6-33.** An independent resurvey is designed to supersede the prior official survey only insofar as the remaining public lands are concerned. The subdivisions previously entered or patented

are in no way affected as to location. All such claims must be identified on the ground, then protected in one of two ways. Whenever possible, the sections in which claims are located are reconstructed from evidence of the record survey just as in a dependent resurvey. Where unrelated control prevents the reconstruction of the sections that would adequately protect them, the alienated lands are segregated as tracts. A particular tract is identical with the lands of a specific description based on the plat of the prior official survey. The tract segregation merely shows where the lands of this description are located with respect to the new section lines of the independent resurvey. In order to avoid confusion with section numbers the tracts are designated beginning with number 37. The plan of the independent resurvey must be such that no lines, monuments, or plat representations duplicate the description of any previous section where disposals have been made.

**6-34.** The statutory authority to review the effect of an independent resurvey upon the boundaries of privately owned land rests in the courts. A decision of the court is binding in fixing a boundary between private lands. It would be contested in fixing a boundary between public and patented lands only if monuments of the official survey have not been considered, the court having no authority to set aside the official survey.

**6-35.** The independent resurvey is accomplished in three distinct steps:

(1) The reestablishment of the outboundaries of the area to be resurveyed, following the methods of a dependent resurvey.

(2) The segregation of lands embraced in any valid claim based on the former approved plat.

(3) The survey of new exterior, subdivisional, and meander lines by a new regular plan.

## Reestablishment of Outboundaries

**6-36.** The limiting boundaries of the lands which are to be independently resurveyed must agree with the previously established and identified exterior or subdivisional lines of the approved original surveys. In order to qualify as a suitable limiting boundary, a line of the ac-

cepted established surveys must be conclusively identified in one position to the exclusion of all others. The lands on one side are to be resubdivided upon a new plan. On the opposite side the original subdivisions are to be strictly maintained, and none of the original conditions are to be disturbed. Where an outboundary has been reestablished by dependent resurvey, the subdivisions of a tract originally described as along or on opposite sides of the outboundary must agree with the line reestablished.

6-37. Although the outboundaries of the independent resurvey generally follow established township exteriors, section lines may qualify as suitable limiting boundaries in special cases. Particular attention should be given to this subject when the field examination is made, with a view to maintaining the original survey as far as it is consistent.

6-38. In some cases a proper limiting boundary cannot be secured without including a greater number of townships than it is practicable to resurvey in one assignment. One or more tracts requiring segregation may then extend across an independently resurveyed outboundary into a township not grouped for resurvey. Any such tract will be fully segregated whether or not the tract was originally described as in the township to be resurveyed. The necessary official steps will be taken to suspend disposal of lands in the adjoining township pending investigations with a view to the resurvey of that township.

Where the lines of the independent resurvey are not to be initiated or closed upon the restored original corners of the outboundaries, the new monuments will be marked only with reference to the township, range, and section to which they will thenceforth relate. New regular corners controlling the lines of the independent resurvey will be established as provided in chapter III under Defective Exteriors. During the preliminary stages of the resurvey there will often be doubt as to whether an old corner will retain its former control or not. The marking of the new monument and its accessories will be deferred until the future significance of the point is determined. Where an old point is not to be the corner of a subdivision, but is to

be perpetuated merely to control future alignment, it will be monumented as an angle point.

### **Metes-and-Bounds Survey of Private Claims**

6-39. The special instructions should designate the sections containing alienated lands which will be dependently resurveyed. Where there is acceptable evidence of the original survey, the identification of the areas that have been disposed of must be the same as would ordinarily be derived by the regular subdivision of the section. The tracts which are to be segregated by metes-and-bounds survey are those areas that cannot be so identified, nor conformed satisfactorily, those where amendment of description appears not to be an available remedy, and those where the disposals are found to be in conflict by overlap. Every corner of these tracts is marked by angle-point monumentation, and a tie is made from each tract to a corner of the resurvey.

6-40. An abstract of pertinent records and a status diagram should be furnished to the surveyor showing lands whose boundaries cannot legally be disturbed. These include patented lands, valid entries, school sections, land grants, disposals, reservations, or selections of lands whose position and description are based upon the original survey and plat. The resurvey will not be complete until each claim described has received full protection in the matter of location. Each must be protected either by individual metes-and-bounds survey or by the assignment of subdivisions of the resurvey whose boundaries coincide or approximately agree with the tract boundaries. In addition it is often desirable to furnish to the surveyor the status of all claims in the adjacent sections of adjoining townships ungrouped for resurvey which might affect the resurvey procedure.

6-41. The survey of private claims need not be completed before beginning the projection of the new lines of the independent resurvey. It is logical, however, to consider the subject of the tract segregations in advance of the question of the establishment of new lines. The surveyor may find it expedient to carry both branches of the survey along together.



6-42. The jurisdiction of the Bureau of Land Management, the limit of the authority of the surveyor, and the bona fide rights of claimants, where entered or patented lands are involved, remain absolutely the same whether the resurvey is to be made upon the dependent or independent plan. Thus, where the independent type of resurvey has been adopted as more feasible, identified corners of the original survey in the immediate vicinity of lands to be segregated are employed for the control of the location of such lands. The question of the good faith of the entryman is fully considered, as previously outlined in this chapter. Where the evidence of the original survey is so obliterated that lack of good faith in location cannot be charged against an entryman, the available collateral evidence is to be regarded as the best indication of the original position of the claim. It is employed as far as consistent for the control of the section boundaries within which such claim is located.

6-43. Where the surveyor cannot definitely locate a claim by identification of the original survey, he should ask the claimant to point out his boundaries. The boundaries of the private claim, so determined, are fixed as between private and public lands, subject to official acceptance of the resurvey. The surveyor should explain that an acceptably located claim must have a form agreeing with the original entry, approximately regular boundaries, an area not widely inconsistent with that shown on the plat, and a location as nearly correct as may be expected from the existing evidence of the original survey.

6-44. Dispute may arise over adjustment of the line between adjoining patented tracts, each acceptably located. If it cannot be reconciled by the surveying process, the tracts are surveyed in conflict and so shown on the resurvey plat.

6-45. The surveyor cannot change materially the configuration of a tract as shown by its original description in order to indemnify the owner against deficiencies in area, to eliminate conflicts between entries, or for any other purpose. If improvements have been located in good faith, the tract survey should be so executed, or the conformation to the

lines of the resurvey so indicated, as to cover these improvements and at the same time maintain substantially the form of the entry as originally described. No departure from this rule is allowed.

6-46. The amendment of entries is a matter for adjudication by the Bureau of Land Management after the resurvey has been accepted and the plats filed in the land office.

6-47. An attempt should be made to consult an absentee owner so that he may point out the lands subject to a metes-and-bounds survey. If the owner cannot be found and there is no indication of the boundaries of a claim, the surveyor should locate it from the nearest original point of control or from a point of a neighboring claim, or assign to the entered or patented lands the appropriate subdivisions of the resurvey. The controlling factors are individual and neighborhood improvements (such as buildings, wells, springs of water, cultivated lands, public roads, fences, corners of recognized private surveys, etc.) which indicate the evident intention of the entryman or patentee as to the position of his land.

6-48. Each nonconformable valid claim in a township is given a serial tract number, commencing with No. 37 in the smallest numbered and entered section of the original plat, progressing through the township in the order in which lot and sections are numbered. A tract number is used but once in a township, and if any tract lies partly in two or more townships subject to resurvey the number applied to the tract in the first township resurveyed is not used for other tracts in the adjoining township.

6-49. The following rules will be observed in executing the metes-and-bounds survey of designated tracts:

- (1) Each acceptably located claim which is at variance with the lines of the resurvey is surveyed and monumented at each angle point.

- (2) Where the limiting boundary of the independent resurvey has been reestablished in its original position by dependent resurvey, the portion of a claim lying outside the boundary is not surveyed by metes and bounds. It is located in an area where the original conditions cannot be disturbed. The portion of the claim lying

within the area of the independent resurvey has at least one identifiable original boundary. It should be defined by segregation or conformation to the lines of the resurvey in a position which is properly related to the identified or restored corners on the limiting boundary.

(3) Where the boundaries of a claim are unacceptably located as pointed out by the claimant, the claim is surveyed and monumented in a suitable relation to the original survey. If the claimant protests the location, the surveyor should request that the protest be made in writing. The written protest will be submitted with the returns of the resurvey. Accurate ties should be made to the corners of the claim as unacceptably located. The surveyor should make a complete report of the facts with reference to the question of location. Further protection to the entryman may be sought by an amendment of entry.

(4) Where the metes-and-bounds segregation of a claim (or its conformation to the lines of the resurvey) does not cover the lands occupied, improved, or claimed, the claimant may express a desire to amend his entry. The fact should be stated in the field notes. A separate full report is made by the surveyor describing the subdivisions actually occupied and those sought under the amended entry which are not within the tract as surveyed. (See current regulations relating to the amendment of entries.)

(5) Where the regular quarter-quarter sections within a claim fall in approximately the same position as the regular quarter-quarter sections of the resurvey, the entryman or patentee may desire to conform his claim to the resurvey. If no apparent objection is found by the surveyor, the facts should be stated in the field notes and the claim so indicated upon the resurvey plat. Under this circumstance the metes-and-bounds survey of the tract is omitted. However, where a tract includes a fractional lot as originally described or where any part of a tract falls upon a fractional lot of the resurvey, the tract must be segregated as a whole by metes-and-bounds survey, even though some or all of the lines of the tract may coincide with certain subdivisional lines of the resurvey.

No claim should be conformed to the lines of an independent resurvey under an involved amended description which includes numerous subdivisions smaller than the regular quarter-quarter section, excepting as completely surveyed and monumented.

(6) Conflicting tracts, each acceptably located, are surveyed and monumented and the conflict shown upon the resurvey plat. Each intersection of conflicting boundaries is determined upon the ground and recorded in the field notes, which also show the number of acres in conflict with each other tract.

(7) The angle points of a tract are designated by serial numbers beginning with No. 1 at the northeast corner, and proceeding around the claim, running westerly from the initial corner. An angle point may be common to one, two, three, or four tracts. The monument is marked as in the following examples:

AP 4	AP 3	T 26 N	R 17 E
TR 38	TR 37	S 14	
AP 1	AP 2	AP 1	AP 2
TR 45	TR 46	TR 38	TR 37
1971		1971	

T 26 N	R 17 E
AP 1	S 14
TR 37	
1971	

(8) No accessories are required with the monuments at the angle points of the metes-and-bounds survey.

(9) At least one angle point of each tract is connected with a regular corner of the resurvey. Where claim lines are intersected by lines of the resurvey, a connection is made to the nearest claim corner and recorded in the field notes of the section line. This is considered a satisfactory connection to all *adjoining* claims located within the interior of either section. Where an extensive system of tract segregations has been surveyed, the interior tracts of the block do not require connections. The establishment of closing corners on the regular line when entering or leaving public land will con-

form to the practice described in Closing Section Lines, sections 3-68 through 3-73.

(10) All recovered monuments of the original survey not otherwise reported upon are connected by course and distance with a corner of the resurvey. The connection and a description of the traces of the original corner as identified are recorded in the field notes of the resurvey. The old monument is destroyed unless the point may be needed to control the position of a claim. (See also Defective Exteriors, section 3-36).

### The Projection of New Lines

6-50. A plan for projecting new section lines can best be made after study of a layout showing (1) lines of the former survey which are to be restored and (2) the necessary tract segregations. If the report of the field examination is explicit, the plan may be incorporated in the special instructions. If the report does not fully identify the position of alienated lands, the plan must be delayed until these lands have been segregated.

6-51. The resubdivision of vacant public lands in a township by independent resurvey is an application of fragmentary subdivision as discussed in chapter III. However, an independent resurvey may involve the resubdivision of a group of many townships where the conditions are comparatively regular except for the tract segregations. First attention is given to completing the township exteriors which are to be independently resurveyed. These are completed as in the establishment of original surveys. The new section lines are surveyed and marked as in regular or fragmentary subdivision, whichever may be the case. New meander lines are run as required. The new exterior and subdivisional lines are usually extended across small blocks of tract segregation surveys, and connections are made as described under Metes-and-Bounds Survey of Private Claims, section 6-39. Where the new lines are so extended across tracts, the corners are fully monumented regardless of the fact that some points fall within the tract segregation surveys. They are required in order to determine the subdivision of the public lands.

6-52. After the plan of running new section boundaries has been determined, the creation of needed new lottings is considered. This must precede the marking of the corner monuments, which may be affected by the manner in which the lots are laid out and numbered.

Where any aliquot part (vacant) of a newly created section would normally have a description that duplicates the corresponding part (alienated) of an original section bearing the same section number, such part or parts of the new section are given appropriate lot numbers. The new lot numbers begin with the next number above the highest numbered lot of that section of the prior survey. Also, where there are new normal lottings in the sections along the north and west boundaries of the township, if those sections are not restorations of the corresponding sections of the prior survey (and same township and range), the lottings are given numbers beginning with the next higher number above those that were previously employed.

6-53. Some new sections may be elongated in order to absorb the discrepancy in the positions of the section-line boundaries as between the old and the new survey. This is taken care of in the lottings of the new sections. Such departure from normal procedure is made necessary by the discrepancies of the prior survey, where the location of the alienated lands cannot be changed.

6-54. Where a section of the resurvey is invaded by tract segregations, the lotting of the public lands is carried out in accordance with the usual plan of lotting within fractional sections. The numbering of the fractional lots begins with the number next higher than the highest number employed in the section of the original survey which bears the same township, range, and section number. This plan avoids any possible confusion which might arise from a duplication in the use of the same lot numbers.

6-55. The plan of the independent resurvey should be carefully studied for the proper placing of all needed quarter-section corners, for either one or two sections, so to provide for the position of the center lines of all sections, restored or new. Where two positions are found to come within less than half the closing limit pre-

scribed for a section, the point first derived as the appropriate position of the quarter-section corner of the restored section boundary is used for control in both sections. This rule is in the interest of simplicity of survey and monumentation.

**6-56.** The general requirements of chapters II, III, and IV must be fully observed in every

respect throughout the execution of the independent resurvey.

It is important that the surveyor make a careful study, during the period of the field work, of the construction of the resurvey plats, to make certain that every possible condition has been given consideration and that all necessary data have been obtained.